

# Annual report 2017

## Chair of Industrial Management



Welcome! An eventful year is drawing to an end. The Chair of Industrial Management and I would like to take the opportunity to review it together with you. Therefore, in the following we will look back on research achievements, interesting guests from academia and business practice, and inspiring events. Thank you for your continuing interest and your most valued support and all the collaborations that may be continued successfully in 2018! Thank you!



Nuremberg, December 2017

Prof. Dr. Kai-Ingo Voigt

## I. Research areas of the Chair

The Chair of Industrial Management is engaged in research in different areas, all dealing with relevant aspects of Industrial Management. In 2017, the Chair conducted research in the following areas:

### **Digitization of the Industrial Value Chain & Industry 4.0**

In the context of this research field, the Chair addresses questions regarding business model effects, opportunities and benefits of Industry 4.0, the role of Industry 4.0 in the context of sustainability, and implementation strategies.



### **Management of High-tech Innovations**

With respect to this research area, the Chair examines relevant determinants of innovation adoption, critical adoption barriers, effective communication strategies to promote consumers' innovation adoption, and the effective management of high-tech products and innovations.



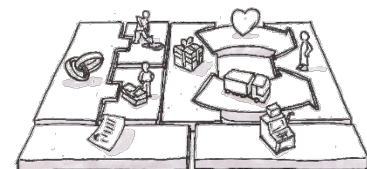
### **Organizational Creativity**

Regarding organizational creativity, we ask questions like what is organizational creativity and how can it distinguished from innovation management, how working teams can be facilitated along the creative process, and if specific techniques like design thinking have a positive effect in creative idea generation.



### **Business Model Innovation and Transformation**

In the context of this area, the Chair analyzes implementation strategies of innovative business models, the role of innovative business models for organizational resilience, and strategies of established companies to face the threat of new market entrants with innovative business models.



### **Corporate Crowdfunding**

With respect to this research field, we pursue questions regarding effective design and implementation of corporate crowdfunding platforms, the role of corporate crowdfunding for enhancing innovation culture, and critical success factors and challenges of crowdfunding campaigns.



## II. Funded research projects

The Chair of Industrial Management participates in several research projects. Thus, the Chair was able to contribute to important lighthouse projects and actively shape them. In detail, the Chair brought its research competence into the following projects:



**Emerging Fields Initiative (EFI):** Within the project “Sustainable Smart Industry – The Industrial Internet of Things as a Model for Sustainable Industrial Value Creation“ under the direction of Prof. Dr. Kai-Ingo Voigt, the interdisciplinary project team examines economic, ecological, and social benefits of Industry 4.0. As a result, it is the aim to develop a new sustainability model in the context of Industry 4.0.



**Project with Robert Bosch GmbH:** Lead by Prof. Dr. Kai-Ingo Voigt, the Chair of Industrial Management carries out a research project with Robert Bosch GmbH. The project team, consisting of researchers and Bosch employees, investigates how Industry 4.0 can be implemented across value creation stages. Developing a new research model and using a unique set of data, the goal of the study is to develop implementation strategies and retrieve practical implications for Bosch.



**Embedded Systems Initiative (ESI):** Within the lab Automation@ESI, the Chair of Industrial Management under direction of Prof. Dr. Kai-Ingo Voigt works on “Technology Management and Application Blueprint” together with Fraunhofer Center for Applied Research on Supply Chain Services. It is the aim of this research project to develop Industry 4.0-technologies that enable a real-time overview of the entire manufacturing process.



**Emerging Fields Initiative (EFI):** Within the interdisciplinary research project “Sustainable Business Models in Energy Markets: Perspectives for the Implementation of Smart Energy Systems”, the Chair of Industrial Management is engaged in examining novel, target-oriented business models for innovative energy systems of the future. In 2017, this research project was brought to a successful conclusion.



Ludwig-Erhard  
Forschungsgesellschaft  
für Kooperative Wirtschaft

**Ludwig-Erhard Forschungsgesellschaft für Kooperative Wirtschaft:** Lead by Prof. Dr. Kai-Ingo Voigt, the Chair of Industrial Management investigates the bank account in the digital age. Based on a conjoint-based needs analysis of consumers, the individual value of distinct product/service features of a bank account of the future can be derived.

### III. Academic journal publications

In 2017, the Chair was again able to give proof of its high research competence and to publish research results from several areas in internationally renowned journals:

Jovanovic, T. Crowdfunding: What do we know so far? **International Journal of Innovation and Technology Management**. [accepted for publication]

Jovanovic, T., Brem, A., & Voigt, K.-I. Who invests why? An analysis of investment decisions in b2b or b2c equity crowdfunding projects. **International Journal of Entrepreneurship and Small Business**. [accepted for publication]

Scheiner, C., Baccarella, C., Bessant, J., & Voigt, K.-I. Participation Motives, Moral Disengagement, and Unethical Behaviour in Idea Competitions. **International Journal of Innovation Management**. [accepted for publication]

Schrauder, S., Kock, A., Baccarella, C., & Voigt, K.-I. Takin' Care of Business Models: The Impact of Business Model Evaluation on Front-End Success. **Journal of Product Innovation Management**. [accepted for publication]

Kiel, D., Arnold, C., & Voigt, K.-I. (2017). The Influence of the Industrial Internet of Things on Business Models of Established Manufacturing Companies - A Business Level Perspective. **Technovation**, 68, 4-19.

Kiel, D., Müller, J., Arnold, C., & Voigt, K.-I. (2017). Sustainable Industrial Value Creation: Benefits and Challenges of Industry 4.0. **International Journal of Innovation Management**, 21(8), 1740015-1 - 1740015-34.

Arnold, C. (2017). The Industrial Internet of Things from a Management Perspective: A Systematic Review of Current Literature. **Journal of Emerging Trends in Marketing and Management**, 1(1), 8-21

Wagner, T., Baccarella, C., & Voigt, K.-I. (2017). Framing social media communication: Investigating the effects of brand post appeals on user interaction. **European Management Journal**, 35(5), 606-616.

Arnold, C., Kiel, D., & Voigt, K.-I. (2017). Innovative Business Models for the Industrial Internet of Things. **Berg- und Hüttenmännische Monatshefte**, 162(9), 371-381.

Wagner, T., Baccarella, C., & Voigt, K.-I. (2017). Communicating technological innovations: The role of technical complexity and product involvement. **European Journal of Innovation Management**, 20(3), 392-405.

Jovanovic, T., Arnold, C., & Voigt, K.-I. (2017). Cooperative banks in need of transition: The influence of Basel III on the business model of German cooperative credit institutions. **Journal of Co-operative Organization and Management**, 5(1), 39-47.

Müller, J., & Voigt, K.-I. (2017). Standardisierung für Industrie 4.0 in KMU - Welche Herausforderungen werden von kleinen und mittleren Unternehmen durch Standardisierung hinsichtlich Industrie 4.0 gesehen? Ein Branchenvergleich. **Industrie 4.0 Management : Gegenwart und Zukunft industrieller Geschäftsprozesse**, 2(33), 29-32.

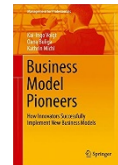
Meinel, M., Maier, L., Wagner, T., & Voigt, K.-I. (2017). Designing Creativity-Enhancing Workspaces: A Critical Look at Empirical Evidence. **Journal of Technology and Innovation Management**, 1(1), 1 - 12.

Dilger, M., Jovanovic, T., & Voigt, K.-I. (2017). Upcrowding energy co-operatives – Evaluating the potential of crowdfunding for business model innovation of energy co-operatives. **Journal of Environmental Management**, 198, 50-62.

#### IV. Books, edited books, and book chapters

In 2017, the Chair of Industrial Management published several research results in edited books and book chapters:

Voigt, K.-I., Buliga, O., & Michl, K. (2017). *Business Model Pioneers: How Innovators Successfully Implement New Business Models*. Cham, Germany: Springer International Publishing.



Voigt, K.-I. (Ed.) (2017). *Die digitale Genossenschaftsbank: Strategische Herausforderungen und Implementierung*. Berlin, Germany: De Gruyter Oldenbourg



Müller, J., Dotzauer, V., & Voigt, K.-I. (2017). Industry 4.0 and its Impact on Reshoring Decisions of German Manufacturing Enterprises. In C. Bode, R. Bogaschewsky, M. Eßig, R. Lasch, & W. Stölzle (Eds.), *Supply Management Research*. Wiesbaden, Germany: Springer Gabler.

Jovanovic, T., & Voigt, K.-I. (2017). Auswirkungen der Digitalisierung auf Genossenschaftsbanken – Eine Geschäftsmodellperspektive. In K.-I. Voigt (Ed.), *Die digitale Genossenschaftsbank: Strategische Herausforderungen und Implementierung*. Berlin, Germany: De Gruyter Oldenbourg.

Müller, J., Maier, L., Veile, J., & Voigt, K.-I. (2017). Cooperation Strategies among SMEs for Implementing Industry 4.0. In W. Kersten, T. Blecker, & C.M. Ringle (Eds.), *Innovations and Strategies for Logistics and Supply Chains*. Berlin, Germany, epubli.

Müller, J., & Voigt, K.-I. (2017). Digitale Plattformen innerhalb von Industrie 4.0 – Strategien für die erfolgreiche Umsetzung in mittelständischen Industrieunternehmen. In J. Gausemeier (Ed.), *Vorausschau und Technologieplanung*. Paderborn, Germany: Heinz Nixdorf Institut.

Meinel, M., & Voigt, K.-I. (2017). What Do We Really Know about Creativity Techniques? A Review of the Empirical Literature. In A. Brem, R. Puente-Diaz, & M. Agogué (Eds.), *The Role of Creativity in the Management of Innovation: State of the Art and Future Research Outlook*. London, England: World Scientific.

## V. International Conferences

In addition to the published journal articles, the Chair of Industrial Management was represented at various international conferences in 2017. Hence, the Chair did not only make its research insights accessible to the academic community, but also participated actively at the academic discussion. Consequently, the Chair of Industrial Management contributed to the international research:

Eismann, T., Wagner, T., Baccarella, C., & Voigt, K.-I. (2017). *Untangling social media excellence: Five typical patterns of super successful posts*. International Marketing Trends Conference, **Madrid, Spain, 26-28 January**.



Müller, J., Dotzauer, V., & Voigt, K.-I. (2017). *Industry 4.0 and its impact on reshoring decisions of German manufacturing enterprises*. 10<sup>th</sup> Wissenschaftliches Symposium "Supply Management", **Mannheim, Germany, 6-7 March**.

Müller, J., & Voigt, K.-I. (2017). *Technology Adoption Strategies for Digitization - Empirical Evidence from German Industrial Enterprises*. 28<sup>th</sup> Production and Operations Management Society (POMS) Annual Conference, **Seattle, WA, 5-8 May**.

Müller, J., & Voigt, K.-I. (2017). *Industry 4.0 - Integration strategies for Small and Medium-sized enterprises*. 26<sup>th</sup> International Association for Management of Technology (IAMOT) Conference, **Vienna, Austria, 14-18 May**.

Kiel, D. (2017). *What do we know about "Industry 4.0" so far?* 26<sup>th</sup> International Association for Management of Technology (IAMOT) Conference, **Vienna, Austria, 14-18 May**.

Arnold, C., Kiel, D., & Voigt, K.-I. (2017). *Innovative Business Models for the Industrial Internet of Things*. 26<sup>th</sup> International Association for Management of Technology (IAMOT) Conference, **Vienna, Austria, 14-18 May**.



Jovanovic, T., Bansemir, B., Kirchner, M., & Voigt, K.-I. (2017). *The Crowdfunding Idea Contest of BMW*. 26<sup>th</sup> International Association for Management of Technology (IAMOT) Conference, **Vienna, Austria, 14-18 May**.

Eismann, T., Meinel, M., Baccarella, C., Voigt, K.-I., & Fixson, S.K. (2017). *Design Thinking for Agile Innovation - Evidence from an Experimental Study*. Wissenschaftstagung der Erich-Gutenberg-Arbeitsgemeinschaft (EGA), **Bonn, Germany, 18 May**.

Meinel, M., Baccarella, C., Wagner, T., & Voigt, K.-I. (2017). *Examining the Relationships between a Creativity-supporting Environment, Ambidexterity, and Innovation Performance*. 24<sup>th</sup> Innovation and Product Development Management Conference (IPDMC), **Reykjavik, Iceland, 11-13 June**.

Arnold, C., Kiel, D., & Voigt, K.-I. (2017). *The Driving Role of the Industrial Internet of Things for Strategic Change: The Case of Electronic Engineering Business Models*. 24<sup>th</sup> Innovation and Product Development Management Conference (IPDMC), **Reykjavik, Iceland, 11-13 June**.



Kiel, D., Müller, J., Arnold, C., & Voigt, K.-I. (2017). *Sustainable Industrial Value Creation: Benefits and Challenges of Industry 4.0*. International Society for Professional Innovation Management (ISPIM) Conference, **Vienna, Austria, 18-21 June**.

Meinel, M., Eismann, T., Baccarella, C., Voigt, K.-I., & Fixson, S.K. (2017). *Design Thinking works! Experimental Evidence from 53 Product Design Teams*. International Society for Professional Innovation Management (ISPIM) Conference, **Vienna, Austria, 18-21 June**.

Wehnert, P., Baccarella, C., & Beckmann, M. (2017). *Crowdfunding Sustainability-Oriented Innovations*. R&D Management Conference, **Leuven, Belgium, 1-5 July**.

Jovanovic, T., & Voigt, K.-I. (2017). *Corporate Crowdfunding: towards a conceptual framework*. R&D Management Conference, **Leuven, Belgium, 1-5 July**.



Müller, J., Erdel, M., & Voigt, K.-I. (2017). *Industry 4.0 - Perspectives and challenges for project logistics*. 24<sup>th</sup> European Operations Management Conference (EurOMA), **Edinburgh, Scotland, 1-5 July**.

Baccarella, C., Wagner, T., & Voigt, K.-I. (2017). *Do Consumers Really Care About Crowdfunding? Exploring the Crowdfunding Effect on Innovation Perception*. 15<sup>th</sup> Open and User Innovation Society Conference (OUI), **Innsbruck, Austria, 10-12 July**.



Wagner, T., Baccarella, C., & Voigt, K.-I. (2017). *Consumer responses to high-tech product advertisements: The role of technical complexity*. 77<sup>th</sup> Academy of Management (AOM) Annual Meeting, **Atlanta, GA, 4-8 August**.

Meinel, M., Eismann, T., Baccarella, C., Voigt, K.-I., & Fixson, S.K. (2017). *The Impact of Design Thinking on Creative Idea Generation*. 18<sup>th</sup> International Continuous Innovation Network (CINet) Conference, **Potsdam, Germany, 10-12 September**.

Arnold, C. (2017). *The Industrial Internet of Things from a Management Perspective: A Systematic Literature Review*. 2<sup>nd</sup> Emerging Trends in Marketing and Management (ETIMM) Conference, **Bucharest, Romania, 27-30 September**.

Müller, J., Veile, J., Maier, L., & Voigt, K.-I. (2017). *Potentiale und Herausforderungen für die Einführung von Arbeit 4.0 in KMU – Ein Branchenvergleich*. Fachkonferenz “Digitalisierung und Industrie 4.0 - Wie verändert sich unsere Arbeitswelt?“, **Stuttgart, Germany, 4 October**.

Maier, L., Meinel, M., Wagner, T., & Voigt, K.-I. (2017). *Workspace Design and Its Influence on Creativity in Organizations: A Systematic Review of the Literature*. 21<sup>st</sup> Annual Interdisciplinary Conference on Entrepreneurship and Innovation (G-Forum), **Leipzig, Germany, 4-6 October**.



Müller, J., Maier, L., Veile, J., & Voigt, K.-I. (2017). *Cooperation Strategies among SMEs for Implementing Industry 4.0*. 11<sup>th</sup> Hamburg International Conference on Logistics (HICL), **Hamburg, Germany, 12-13 October**.

Arnold, C., & Voigt, K.-I. (2017). *Ecosystem Effects of the Industrial Internet of Things on Manufacturing Companies*. 4<sup>th</sup> International Management Information Systems Conference (IMISC), **Istanbul, Turkey, 17-20 October**.

Voigt, K.-I. (2017). *Research Areas of the Chair of Industrial Management*. Bavarian-Russian Conference on Business Sciences, **Nuremberg, Germany, 9-10 November**.

Müller, J., & Voigt, K.-I. (2017). *Industrie 4.0 aus Perspektive der nachhaltigen industriellen Wertschöpfung*. Herbsttagung der wissenschaftlichen Kommission Produktionswirtschaft, **Halle (Saale), Germany, 10-11 November**.

Müller, J., & Voigt, K.-I. (2017). *Digitale Plattformen innerhalb von Industrie 4.0 – Strategien für die erfolgreiche Umsetzung in mittelständischen Industrieunternehmen*. 13<sup>th</sup> Symposium für Vorausschau und Technologieplanung, **Berlin, Germany, 23-24 November**.



## VI. Guest speakers from academics and practice

The Chair of Industrial Management is pleased that numerous practitioners accepted Prof. Dr. Kai-Ingo Voigt's invitation to the School of Business and Economics and gave interesting, exciting, and true-to-life insights into business practice:

**Felix Walchshöfer**, member of the executive board of **Challenge Roth**, followed Prof. Dr. Kai-Ingo Voigt's invitation and gave interesting insights into the company of Challenge Roth during the Entrepreneurship lecture. Further, he talked about the success story of Challenge Roth, its demarcation of other competitions like the Ironman, and discussed exciting questions of the interested audience. The entire Chair wants to thank Mr. Walchshöfer for these valuable insights!



The Chair of Industrial Management thanks **Dr. Daniel Gerhard**, Coordinator of Project Additive Manufacturing at **Schaeffler AG**, for his guest lecture in the course "BWL für Ingenieure" about the management of new technologies. He gave exciting insights into various activities of the Schaeffler Group to apply successfully these new manufacturing technologies in the future.

**Dr. Andreas Volek**, Head of Strategic Innovation Management at **Diehl Stiftung & Co. KG**, accepted Prof. Dr. Kai-Ingo Voigt's invitation and held an interesting presentation on innovation practices at Diehl. In his talk, he explained how to translate various industry trends into concrete innovation projects. The Chair wants to thank Dr. Volek for sharing his insights with us!



In 2017, the Chair of Industrial Management started a high-class expert lecture series on Industry 4.0. Following the invitation of Prof. Dr. Kai-Ingo Voigt, a great first guest lecture was held by **Prof. Dr. Tim Hosenfeldt**, Senior Vice President at **Schaeffler AG** and responsible for Schaeffler's technology and innovation strategy. He gave a comprehensive overview about current innovation initiatives and emphasized the importance of open innovation activities for the future success of an industry firm like Schaeffler. Prof. Voigt thanks Prof. Hosenfeldt for sharing his insights with a highly interested audience!

Prof. Dr Kai-Ingo Voigt and Prof. Dr. Wolfram Scheffler had the pleasure to welcome **Prof. Dieter Kempf** president of the **BDI**, as the second guest speaker in the context of the Chair's Industry 4.0 lecture series. He held a captivating lecture on Industry 4.0 and its cross-national effects. In doing so, he shared insights on the role of German manufacturing industries in a global context. Moreover, he discussed the impact of the Industry 4.0 megatrend on economies and societies alike.



The next expert participating in our lecture series was **Prof. Dr. Siegfried Russwurm**, advisory board member of **Acatech** and former CTO of **Siemens**. In his speech "Industrie 4.0: Digitale Transformation des Produktlebenszyklus" he showed how digitization and connectivity change business models and value creation against the challenge of future competitiveness and emphasized the importance of a "digital twin". Prof. Voigt and the Chair give thanks to Prof. Russwurm for his visionary speech and look forward to further exchange!

The Chair of Industrial Management had the pleasure to welcome **Dr. Mathias Glasmacher**, Head of Corporate Technology at **Diehl Stiftung & Co. KG**, for a guest lecture as part of the lecture series on Industry 4.0. Dr. Glasmacher talked about how Diehl is dealing with the megatrend Industry 4.0. Moreover, he emphasized that Industry 4.0 is one part of the digital transformation, which is continuously changing industries and societies. Prof. Voigt thanks Dr. Glasmacher for his wonderful speech!



As part of the course "BWL für Ingenieure", **Dr.-Ing. Daniel Teichmann**, founder and CEO of **Hydrogenious Technologies**, held a motivating guest lecture entitled "Aus der Forschung in die Firma – Ausgründung der Hydrogenious Technologies GmbH aus der FAU". He reported on the establishment, development, and success factors of his high-tech start-up. Prof. Dr. Kai-Ingo Voigt and the Chair of Industrial Management give many thanks to Mr. Teichmann for sharing his passion for entrepreneurship!

The Chair of Industrial Management had the pleasure to welcome **Daniel Krauss**, founder and CIO at **FlixMobility** (formerly **FlixBus**), for a guest lecture on the topics of innovation management, entrepreneurship, and the future of mobility. On the company's journey to the top, Mr. Krauss has made many interesting experiences he shared with the highly interested students. Prof. Voigt and his team appreciate his passionate engagement and are looking forward to welcoming him again soon.



In our lecture series on Industry 4.0, Prof. Dr. Kai-Ingo Voigt welcomed **Prof. Dr. Alexander Pflaum**, Director of **Fraunhofer SCS** and Professor at the University of Bamberg. Prof. Pflaum talked about the way towards a platform economy in times of digitization and Industry 4.0. Thereby, he gave some very interesting insights on the research of Fraunhofer in the context of Industry 4.0. Moreover, Prof. Pflaum emphasized the role of data analytics and new business models in the course of digital transformation.

The Chair of Industrial Management welcomed **Jost Bendel**, Vice President Service for Factory Automation at **Siemens AG**, for the sixth guest lecture in the context of our Industry 4.0 lecture series. Mr. Bendel talked about the importance of Industry 4.0 for a big player like Siemens and gave fascinating insights into Siemens' production processes. Prof. Voigt and the entire Chair thank Mr. Bendel for accepting the invitation and his captivating talk.



The Chair of Industrial Management had the pleasure to welcome **Dr. Eva Mitterreiter**, Method-Development and Training at **Bosch**, and **Dr. Uwe Kirschner**, Vice President Business Model Innovation at **Bosch**, for a guest lecture on the topic "Business Model Innovation @ Bosch". They gave interesting insights on the execution of business model innovation, the lean startup approach, and other innovation management tools inside a multinational firm.

The Chair of Industrial Management welcomed **Felix Schaffelhofer**, Head of Strategy Development at **Teambank**, for a guest lecture on the topic “Innovation in the banking sector”. Mr. Schaffelhofer and his colleague **Daniela Leistner** outlined today’s challenges for banks in a volatile business environment and shared interesting insights into future trends in the banking sector. The Chair is looking forward to welcoming Mr. Schaffelhofer and his team again soon.



In the course of our lecture series on Industry 4.0, **James Brickell**, Team Leader and Manufacturing Engineer at **Bosch**, held a guest lecture about the perspective of Bosch on the topic Industry 4.0. He showed very interesting application examples such as 3D printing, which are already incorporated at the Bosch factory in Nürnberg. Prof. Voigt and the Chair thank Mr. Brickell for his very interesting speech!

The Chair of Industrial Management had the pleasure to welcome **Bruno Götz**, Head of Patents and Norms at **TÜV Rheinland Consulting**, for a guest lecture on the topic “How to protect innovations”. Mr. Götz showed different possibilities for organizations to protect intellectual property rights and innovations. Thus, he gave interesting insights into a patent manager’s daily business.



The last lecture in our lecture series on Industry 4.0 was held by **Dr. Daniel Gerhard**, Coordinator of Project Additive Manufacturing at **Schaeffler AG**. He emphasized the potential of additive production processes for the future of industrial companies. Thereby, he presented very interesting and successful examples of additive manufacturing at Schaeffler. The speech was followed by a lively discussion with many questions from the student audience.

**Dr. Horst J. Kayser**, Chief Strategy Officer of **Siemens AG**, delivered a guest lecture during the Global Operations Strategy course. The Chair thanks Dr. Kayser for a truly captivating lecture, which merged theoretical notions of international strategy with lively illustrations from corporate practice.



**Janina Kugel**, Chief Human Resources Officer and board member of **Siemens AG**, followed Prof. Dr. Kai-Ingo Voigt's invitation and participated at this year's Nuremberg Management Talks. After a live interview on the topic "New markets – new strategies", Mrs. Kugel answered many exciting questions of the interesting audience. The entire Chair thanks Mrs. Kugel for giving interesting insights into modern leadership and future value creation.

## VII. International teaching activities

Besides conducting teaching efforts at the Friedrich-Alexander University Erlangen-Nürnberg, the Chair of Industrial Management is additionally integrated into the teaching program of foreign partner universities. Hence, the Chair gave some guest lectures abroad:

**Prof. Dr. Kai-Ingo Voigt**, **Dr. Christian Baccarella**, and **Dr. Timm Wagner** repeatedly followed the invitation of the **Universidad de Alcalá** near Madrid and held a guest lecture on technology and innovation management. In the context of this seminar, students of different master and MBA programs discussed recent trends, methods, and instrument of technology and innovation management and convinced with well-made final presentations.





**Prof. Dr. Kai-Ingo Voigt, Tobias Eismann, and Dr. Christian Baccarella** visited the Chair's long-standing partner **Sofia University "St. Kliment Ohridski"** to give a lecture on technology and innovation management. As an integral part of Sofia University's curriculum of the "German class", students eagerly discussed about the most trending topics related to innovations. Moreover, they had the opportunity to become active themselves and presented their ideas to their fellow students. We thank the University for their hospitality and we are happy that we again had the chance to be able to contribute to the success of this important study program.

In 2017, **Prof. Dr. Kai-Ingo Voigt** was repeatedly invited to teach "Technology and Innovation Management" at the **International Summer School at UIBE in Beijing**. More than 80 professors from renowned universities across the globe were invited for this two-week summer school program. In Prof. Voigt's lecture, more than 40 students passionately participated in the lecture and their different group assignments on innovation management topics, such as Open Innovation, Creativity, and Technology Management. After two exciting weeks of insights in Innovation Management, all students successfully participated in the final exam.



**Prof. Dr. Kai-Ingo Voigt** was happy to follow another invitation of the **UIBE in Beijing** and held a session on Innovation Management. Prof. Voigt talked about Business Model Innovation and how students can make use of the Business Model Canvas for entrepreneurship purposes. The students enthusiastically participated in this session contributing to a great discussion. Prof. Voigt wants to give his sincere thanks to Mrs. Lian, Director of Career Center at UIBE, for this opportunity to share his passion for innovation with the Chinese students.

**Dr. Lothar Czaja** was pleased to follow the third invitation of the **UIBE in Beijing** in 2017 and hold a lecture about production management in the context of the 4+2 program. This program exists for more than ten years and promotes the international exchange between the FAU and the UIBE.



## VIII. Expert panel participations and invited speeches

The research competencies at the Chair of Industrial Management are widely recognized, resulting in several invitations to participate in expert panels. Consequently, the Chair contributes to fruitful discussions of current research topics:

**Prof. Dr. Kai-Ingo Voigt** accepted an invitation to join an expert panel talking about the importance of creativity for innovation management at the **International Trade Fair Ideals, Inventions, New Products (iENA) 2017** in Nuremberg. Besides the academic view provided by Prof. Voigt and Martin Meinel, two industry experts and a professional inventor presented different perspectives on future trends in innovation management



In the context of the “**Lange Nacht der Wissenschaften 2017**”, **Prof. Dr. Kai-Ingo Voigt** shared his opinion and knowledge on the future of work in the context of Industry 4.0 in an expert panel discussion organized by the Center for Management, Technology, and Society (CMTS). Under the slogan “Industry 4.0: End or future of work?”, renowned experts from both science and practice gave profound insights into the future role of employees and human work in an increasingly digitized and connected job environment.

**Prof. Dr. Kai-Ingo Voigt** was invited by the “**Innovation Forum of Sustainable Energy Systems**” to share his knowledge on “The small and medium-sized enterprises’ start into the future of energy markets – Strategies and new cooperations for industry-spanning solutions”. Prof. Voigt discussed the topic controversially with practitioners and agreed on the vital necessity of cross-industry collaborations between large as well as small and medium-sized companies to actively shape the energy markets’ future





In 2017, **Prof. Dr. Kai-Ingo Voigt** held the keynote about creativity as a source of competitive advantage at “UnternehmerLunch”, an event for corporate clients hosted by **Sparkasse Nürnberg**. After an introduction by Roland Burgis, board member of Sparkasse Nürnberg, Prof. Dr. Kai-Ingo Voigt talked about the role of creativity for German companies and presented latest research on the effectiveness of design thinking for new product concept development.

Following an invitation of the **Börsen- und Wertpapiervereins Nürnberg e.V.**, **Prof Dr. Kai-Ingo Voigt** and senior executives talked about the topic “Germany 2014 – between innovation and tradition”. In doing so, the expert panel discussed about the future innovation power of Germany.



## IX. Networks with academic partners and business practice

Besides high-class research, the Chair of Industrial Management appreciates networks with business practice. Therefore, the Chair is in regular contact with regional and nationwide operating companies – both internationally well-known companies from the DAX as well as small and medium sized hidden champions. It is gratifying that in 2017, a variety of company representatives followed the invitation of Prof. Dr. Kai-Ingo Voigt and were available for different formats:

**Prof. Mohan Subramaniam**, associate professor at the Carroll School of Management of the Boston College, followed Prof. Dr. Kai-Ingo Voigt’s invitation and gave an inspiring workshop on the effects of “Competitive Strategies for the Digital Age”. In this seminar, he developed and discussed the new business opportunities for established companies with selected participants from business practice. The entire Chair thanks Prof. Mohan Subramaniam for his effort and is looking forward to further cooperation with the Boston College!







Under the direction of Prof. Dr. Kai-Ingo Voigt and Prof. Tiziano Vescov, the **3<sup>rd</sup> class of the Siemens MBA** “International Leadership and Finance” completed their marketing module at the Università Ca` Foscari in Venice. In the context of this academic foreign trip, the MBA students had the opportunity to visit a well-known start-up area and listen to a talk about B2B marketing at Siemens by Heinz Eisenbeiss, Head of Marketing and Promotion Factory Automation of the Siemens AG.

A selected group of students worked on the topic “Too big to fail? – The management of disruptive technological change” and discussed their results with **Dr. Robert Mayr**, CEO of DATEV eG. The students analyzed several companies that had to face a technological change and derived exciting implications regarding the handling of disruptive technologies. The entire Chair thanks Dr. Mayr for his efforts!



In the course of the end of the lecture “Creativity and Design in Innovation Management”, the students had the opportunity to gain insights into business practice by two guest lectures. **Pascal Blum**, CEO and co-founder of unu, explained the importance of creativity and design in his young company. **Frank Stegert**, Managing Director and co-founder of 99chairs, showed how the physical work environment influences corporate creativity. The entire Chair thanks both speakers for their valuable insights!

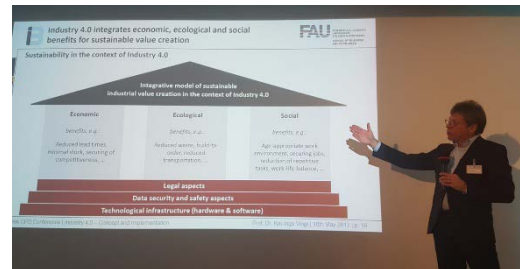
In 2017, the 2<sup>nd</sup> “**Corporate Crowdfunding Day**”, hosted by the Chair of Industrial Management took place. This workshop aims at examining the benefits of the relatively new tool of corporate crowdfunding for the ideal and innovation management. In this context, twelve companies discussed challenges and implementation strategies of corporate crowdfunding. The Chair thanks all participants and is looking forward to future workshops about this innovative topic!





Accompanied by Prof. Dr. Kai-Ingo Voigt, the **3<sup>rd</sup> class of the Siemens MBA program** „International Leadership and Finance” visited Boston. Under the supervision of **Prof. Ryan Davies**, the participants successfully attended the finance module at Babson College.

Prof. Dr. Kai-Ingo Voigt followed the invitation to talk about Industry 4.0 at the **Siemens CFO Conference** with pleasure. Under the heading “Industry 4.0 – Concept and Implementation”, he presented exciting insights about necessary business model changes and the relevance of Industry 4.0 for SMEs and associated challenges to an interested audience composed of Siemens top executives.



In 2017, the academic conference of the **Erich-Gutenberg-Arbeitsgemeinschaft Köln e.V.** took place at Universitätsclub Bonn under the topic „Towards agile innovation: A new paradigm for innovation management?“. After a warm welcome of Prof. Dr. Kai-Ingo Voigt, president of the Erich-Gutenberg-Arbeitsgemeinschaft, junior and senior researchers presented their latest research results on this exciting topic to an interesting audience composed of both researchers as well as practitioners.

In 2017, the 25 graduates of the **12<sup>th</sup> class of the MBA “Business Management” Program** received their MBA diplomas from Prof. Dr. Kai-Ingo Voigt, Director of Executive Education. After a felicitous introduction by Prof. Voigt, Prof. Dr. Berthold U. Wigger (KIT), lecturer for Managerial Economics, was honored with the Best Teacher Award and delivered a very interesting and enjoyable speech. We congratulate all graduates on successfully finishing their MBAs and wish them all the best and continuous success for their future.





Prof. Dr. Kai-Ingo Voigt followed the invitation of **Bundesverband mittelständische Wirtschaft Nürnberg, Friedrich-Naumann-Stiftung für die Freiheit, and AiF Forschung Technik Kommunikation GmbH** and talked about the role of creativity as a competitive advantage for companies and Germany in general at „Innovationsoffensive. Mittelstand und Gründer.“ event in Nuremberg. Afterwards, he joined the panel discussion and answered the various questions of the attentive audience.

For the fourth year in a row, many board members and representatives of well-known cooperative banks followed the invitation to the “**Bankentag 2017**” of the Research Institute for Cooperatives in Nuremberg, which was held under the topic “Profitability in banking business – successfully making business in challenging times”. Prof. Dr. Kai-Ingo Voigt, president of the Research Institute for Cooperatives, welcomed more than 50 participants who listened to many interesting and exciting presentations. Among the speakers, we welcomed **Dr. Alexander Büchel** (Vice President GVB, Munich), **Jörg Bruch** (TeamBank AG), **Dirk Helmbrecht** (CEO VR Bank, Nürnberg), and **Dr. Matthias Everding** (CEO Sparkasse Nürnberg). Apart from the presentations, the event offered a valuable platform for information interchange between science and practice. Prof. Voigt gives many thanks to all speakers and participants.



In this 2017 summer term’s final presentations of the seminar with former Siemens CEO **Prof. Dr. Heinrich von Pierer**, the students examined Corporate Venture Initiatives of different companies. In total, 15 students successfully participated in the seminar and delivered a seminar paper as well as a 20-minute presentation. The Chair of Industrial Management is looking forward to the next seminar with Prof. von Pierer.

In 2017, the graduates of the **2<sup>nd</sup> class of the Siemens MBA** Program received their MBA diplomas from Prof. Dr. Joachim Hornegger, President of the FAU, Dr. Ralf P. Thomas, CFO of Siemens AG, and Prof. Dr. Kai-Ingo Voigt, Director of Executive Education. Within this program, the participants cover eleven modules, from which three are at partner universities of FAU at Università Ca'Foscari in Venice, Babson College in Boston, and Tongji University in Shanghai. Prof. Hornegger and Prof. Voigt look forward to continue the successful cooperation between Siemens AG and FAU. We congratulate all graduates on successfully finishing their MBAs and wish them all the best and continuous success for their future.



The current as well as former classes of the **MBA “Business Management”** gladly followed the invitation to the MBA summer party at “Gutmann am Dutzendteich”. The highlight of the evening was an inspiring and passionate speech of **Daniel Krauss**, founder and CIO of FlixMobility, on the company’s success story as well as the future of mobility and public transport. Prof. Voigt gives many thanks to Daniel Krauss for contributing to the summer party as well as to Oxana Malinowski and Sylvia Korell for organizing a brilliant evening!

**Prof. Dr. Stefan Asenkerschbaumer**, CFO and Deputy Chairman of the board of management of Robert Bosch GmbH, discussed strategies regarding the integration of suppliers within Industry 4.0 for the automotive industry, machine-building enterprises, electrical industry, and information technology enterprises with the students of the 6<sup>th</sup> “Industrieseminar”. The Chair thanks Prof. Asenkerschbaumer for his dedication and is looking forward to further interesting seminars to come!





**Dr. Robert Mayr**, CEO of DATEV eG, and Prof. Dr. Kai-Ingo Voigt had the pleasure to listen to the final presentations of the seminar on strategic innovation in cooperation with DATEV. The Chair of Industrial Management is very excited for further cooperation with DATEV on this seminar and gives sincere thanks to Dr. Mayr for his invitation.

In 2017, the “**Corporate Crowdfunding Day**”, hosted by the Chair of Industrial Management, took place for the third time in a row. This workshop is dedicated to the development of corporate crowdfunding as a mechanism for innovation management in companies. Prof. Dr. Kai-Ingo Voigt welcomed ten company representatives, who discussed the different application possibilities of this tool and presented their initiatives in more detail. The Chair would like to thank the participants for an extraordinary valuable workshop and looks forward to further cooperations and future workshops!



Under the supervision of Prof. Dr. Kai-Ingo Voigt and **Prof. Han (Tongji University)**, the **3<sup>rd</sup> class of the Siemens MBA** completed the Global Leadership Module at the Tongji University in Shanghai. The Global Leadership Module was designed to tackle leadership from four different perspectives: the context of leadership, i.e. the Chinese culture and economy; strategy leadership; innovation leadership; and people leadership.

In 2017, **Prof. Dr. Kai-Ingo Voigt** and **Dr. Ralf P. Thomas (CFO of Siemens AG)**, and **Dr. Roland Busch (CTO of Siemens AG)** welcomed the **4<sup>th</sup> class of the Siemens MBA** “International Leadership and Finance” in Feldafing. This specialized MBA program, which was developed and designed in cooperation with the FAU and the Siemens AG, is primarily aimed at leading young professionals from several divisions, departments, and regions that are nominated by a member of the Finance-Leadership-Team.





**Prof. Dr. Stefan Asenkerschbaumer**, CFO and Deputy Chairman of the board of management of Robert Bosch GmbH, started the seminar “Das Industrieseminar” for the 7<sup>th</sup> time. This year’s seminar is dedicated to the successful establishment of digital platforms in the context of Industry 4.0. The Chair thanks Prof. Asenkerschbaumer for his inspiring introduction to the topic and is looking forward to insightful presentations in the next year!

The Chair of Industrial Management utilizes also its further training programs to fosters a deep exchange with business practice. In the context, the **14<sup>th</sup> MBA-year** of the FAU Erlangen-Nuremberg, which is under the direction of Prof. Dr. Kai-Ingo Voigt, started with a team-building event in Prague.



**Prof. Dr. Heinrich von Pierer**, former Siemens CEO, discussed important and recent topics for the German economy with a selected group of students from different bachelor and master degree programs for the 26<sup>th</sup> time. This year’s seminar topic was “Opportunities and risks of German industry in previously underrated states”. The entire Chair thanks Prof. v. Pierer for his dedication and is looking forward to further interesting seminars to come!

**Prof. Dr. Stefan Asenkerschbaumer**, CFO of Robert Bosch GmbH and Honorary Professor of the Chair of Industrial Management, headed the program committee of the annual meeting of the **Schmalenbach-Gesellschaft für Betriebswirtschaft e.V.**, in Düsseldorf. In the context of this year’s meeting with the topic “Cross-Border M&A”, top-class speakers and industry experts presented and discussed interesting topics on cross-border M&A projects.





This year, Prof. Dr. Kai-Ingo Voigt, president of the **Erich-Gutenberg-Arbeitsgemeinschaft Köln e.V. (EGA)**, repeatedly welcomed both practitioners and scholars at the annual meeting of the EGA. After the presentation of several awards for outstanding academic works, the topic “Digital Leadership” was discussed with several renown guest speakers and experts from academia, politics, and corporate practice. The entire board of the EGA gives many thanks to all laudators, speakers, sponsors, members, and guests, which contributed to a highly successful annual meeting by their participation.

## X. Awards and prizes

The Chair of Industrial Management received numerous awards and prizes in 2017. We are very happy for the appreciation of our research and teaching efforts and take it as a motivation for our future work.

**Top lecture:** In the winter term 2016/17, the lecture “**BWL für Ingenieure**” received the highest evaluation score of all lectures and seminars given at the school of engineering in Erlangen. The aim of the course is to enable engineering students to understand economic aspects, e.g., legal forms, strategic management, technology and innovation management, industrial value creation, marketing & sales, and entrepreneurship. The entire team of the Chair of Industrial Management is pleased with this appreciation and gives thanks to all students for the positive feedback!



**Best Paper Award:** Dr. Daniel Kiel presented a systematic review of academic literature at the 26th International Association for Management of Technology (IAMOT) Conference in Vienna. For his article “What do we know about Industry 4.0 so far?”, he was honored with the **Best Student Paper Award**. The entire Chair thanks Dr. Kiel for his superb research results!

**PhD prizes:** The Chair of Industrial Management is delighted that the chair's research is perceived to be excellent and of high quality as **Dr. Mathias Dilger** and **Dr. Timm Wagner** both were awarded with the **Hermann Gutmann foundation's PhD prize** for their outstanding research results and contributions to science. Prof. Voigt and his entire chair express their warmest congratulations and wish all PhD graduates the very best for both their personal and professional future.



**Best Paper Award:** The Chair of Industrial Management is pleased that the paper “Sustainable Industrial Value Creation: Benefits and Challenges of Industry 4.0” presented at the International Society for Professional Innovation Management (ISPIM) Conference in Vienna was honoured with the **Alex Gofman Best Paper Award**. It has been the second year in a row now that the ISPIM appreciated the chair's research activities with this outstanding award. The authors **Dr. Daniel Kiel**, **Julian Müller**, **Dr. Christian Arnold**, and **Prof. Dr. Kai-Ingo Voigt** want to express their gratefulness to the ISPIM board and take this recognition as motivation for further research!

**Top lecture:** In the summer term 2017, “**BWL für Ingenieure**” was again evaluated to a top position among all lectures and seminars offered at the school of engineering in Erlangen. The students placed the lecture and the exercise at the 2nd and the 1st position. The entire team of the Chair of Industrial Management gives many thanks to all students for appreciating our teaching efforts!





## XI. Graduations

The Chair of Industrial Management is proud to announce the designation of **Prof. Dr. Stefan Asenkerschbaumer**, CFO and Deputy Chairman of the board of management of Robert Bosch GmbH, as **Honorary Professor at the FAU and the Chair of Industrial Management**. Prof. Asenkerschbaumer holds the “Industrieseminar” at the Chair. We cordially congratulate him and are looking forward to the future cooperation!



Furthermore, the year 2017 held ready two ceremonious highlights in the form of doctoral awards ceremonies. The Chair of Industrial Management was able to celebrate seven successful **PhD graduations**. Prof. Dr. Kai-Ingo Voigt and the entire Chair very cordially congratulate **Dr. Christian Arnold, Dr. Oana Buliga, Dr. Maximilian Dietz, Dr. Mathias Dilger, Dr. Tanja Jovanovic, Dr. Daniel Kiel, and Dr. Timm Wagner** for their outstanding research achievements! Seven in (almost) one stroke!



**Prof. Dr. Kai-Ingo Voigt and the entire Chair of  
Industrial Management cordially thank you  
for your interest and support!  
We are looking forward to further collaborations in 2018!**